FCC 96-215

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

In the Matter of	)	WT Docket No. 95-102
	)	
Amendment of Part 95 of the	)	RM-8499
Commission's Rules to	)	
Establish a Very Short Distance	)	
Two-way Voice Radio Service	)	

REPORT AND ORDER

Adopted: May 10, 1996 **Released: May 15, 1996**

By the Commission:

I. INTRODUCTION

1. On June 22, 1995, the Commission adopted a *Notice of Proposed Rule Making* (*Notice*) proposing to establish a very short distance, unlicensed, two-way voice personal radio service called the Family Radio Service (FRS).[1] We initiated the *Notice* in response to a petition filed by the Radio Shack Division of Tandy Corporation (Tandy).[2] Comments to the *Notice* agreed that there is a burgeoning need for the FRS, and that innovative products can be supplied at low cost.[3] This *Report and Order* establishes this new service and adopts rules substantially as proposed in the *Notice*.

II. EXECUTIVE SUMMARY

2. The *Notice* proposed to amend Part 95 of the rules[4] to establish the FRS -- a service aimed at providing an affordable and convenient means of direct, short range two-way voice communications among small groups of persons. This *Report and Order* adopts rules establishing the FRS. The only changes from the *Notice* are improved transmitter technical standards, as recommended in the comments, to maximize spectrum sharing with the General

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[1] 10 FCC Rcd 8235 (1995).

[2] *See* Public Notice, July 26, 1994, Report No. 2033.

[3] A list of parties submitting comments and reply comments is in Appendix A.

[4] 47 C.F.R. Part 95.

Mobile Radio Service (GMRS).[5] This new service will help fill a market niche in short distance, personal communication needs. The FRS will enable families, friends and associates to communicate among themselves within neighborhoods and while on group outings. The FRS will share two small frequency bands with the GMRS.[6] Interconnection with the Public Switched Network (PSN) will be prohibited. Operating authority in the FRS will be by rule rather than by individual licenses and administration will be primarily through transmitter technical standards.

III. DISCUSSION

A. Need for the FRS

3. *Proposal.* Our goal in proposing to establish the FRS was to provide families, friends and associates the capability to communicate with one another over a very short range, typically a few city blocks. We envisioned the FRS as facilitating activities around the home, throughout the neighborhood, at group outings and at activities where group members become separated, either planned or inadvertently. The FRS also would be useful to hunters, campers, hikers, bicyclists and other outdoor activity enthusiasts who need to communicate with other members of their party who are out of speaking range or sight but still in the same general area. Further, we believed the FRS would create new jobs as well as provide more choices for consumers.

4. *Comments.* The comments overwhelmingly support establishing the FRS. For example, the Consumer Electronics Group of the Electronics Industry Association (EIA) states that there is significant demand for the FRS.[7] Motorola, Inc. (Motorola) contends that the general public has a strong need for this type of personal communication, and the FRS would meet this need.[8] It notes that the FRS can be used by parents for keeping track of children, and grass roots public safety organizations, such as Neighborhood Watch groups, among others.[9] Further, Motorola states that manufacturers can provide palm-sized FRS units at low cost.[10] ALLTEL Mobile Communications, Inc. (ALLTEL) agrees with Motorola that the FRS would fill a narrow market niche unmet by traditional private land mobile radio services or common carriage communications providers.[11] According to ALLTEL, the FRS would facilitate activities around

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[5] The GMRS is a land mobile radio service available to persons for two-way communications to facilitate the activities of licensees and their immediate family members. The rules for GMRS are in Part 95, Subpart A, of the Commission's Rules, 47 C.F.R. Part 95, Subpart A.

[6] The frequency bands are 462.5375-462.7375 MHz and 467.5375-467.7375 MHz.

[7] Comments of the Consumer Electronics Group of the Electronics Industry Association at 2.

[8] Comments of Motorola, Inc. at 5-6.

[9] Comments of Motorola at 6.

[10] Comments of Motorola at 6-7 Motorola states that it plans to market FRS radios priced between $100 to $250. *Id.* at n. 15.

[11] Comments of ALLTEL Mobile Communications, Inc. at 2, Motorola at 6.

the home and local neighborhood because it would provide small groups adequate voice communications over a very short distance.[12] Cobra Electronics Corp. (Cobra) also believes that the FRS would fill a need for communications by families and sports enthusiasts.[13] Tandy says FRS will enable millions of Americans to use a high quality communication service to maintain close contact with only a modest investment.[14] Tandy comments that it plans to market FRS units in the $100-$150 range.[15]

5. *Discussion.* The comments affirm that there is a need for a direct, short range, personal communications capability of the type envisioned in the *Notice* and that manufacturers are prepared to offer innovative palm-size FRS units at very affordable prices. The FRS would enhance public and personal safety and service to individuals, including individuals with disabilities and parents wanting to keep in touch with their children. Many families and other small groups have need for their members to communicate with each other while visiting shopping malls and amusement parks, attending sporting events, camping or when taking part in recreational and other activities. Finally, it would create new jobs as well as provide more choices for American consumers to meet their communications requirements. Therefore, we are adopting rules establishing the FRS.

B. Channels

6. *Proposal.* In the *Notice*, we proposed to authorize fourteen channels for the FRS.[16] The channels are located within the two Ultra-High Frequency (UHF) bands used by the GMRS. Seven of the fourteen channels would be new channels positioned on frequencies between the eight GMRS repeater input channels. The remaining seven channels are channels currently available to GMRS licensees for communications similar to those proposed for the FRS.[17]

7. *Comments.* Commenters generally supported our proposal to use channels in the GMRS bands. The Telecommunications Industry Association (TIA) and Tandy, for example, agree that the channels we proposed for the FRS would serve the purpose intended.[18] Cobra and Michael T. McKenna also voice support for using these channels for the FRS.[19] GMRS licensees,

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[12] Comments of ALLTEL Mobile Communications, Inc. at 2.

[13] Comments of Cobra Electronics Corp. at 1.

[14] Comments of Tandy at 1-2.

[15] Comments of Tandy Corporation at 1-2.

[16] *Notice* at para. 8.

[17] These channels are available to any GMRS system licensed to an individual and may be used for low power (5 watts) base or mobile simplex operation.

[18] Comments of TIA at 1, Tandy Corporation at 2.

[19] Comments of Cobra at 1, Michael T. McKenna at 1-2.

however, oppose sharing the GMRS frequency bands with the FRS.[20] They are concerned that FRS units transmitting on channels shared with GMRS stations or on channels adjacent to GMRS repeater input channels will cause interference to GMRS communications.[21] They suggest FRS channels be placed in other frequency bands[22]or be taken from channels assigned other radio services.[23] EIA requests that interference to the reception of signals transmitted by television stations be minimized.[24] SpaceLabs Medical, Inc. (SpaceLabs) is concerned that FRS units could cause erroneous results in medical monitoring equipment used in health care facilities.[25]

8. *Discussion.* We are adopting our proposal to authorize FRS to use fourteen channels located within the bands now allocated to the GMRS.[26] In an era of unparalleled demand for radio communications, it is necessary that we promote the efficient and intensive use of spectrum whenever possible. One way of increasing spectrum efficiency is through spectrum sharing. We believe the bands are ideally suited for sharing between the FRS and GMRS for three reasons. First, the GMRS channels are not heavily used.[27] Second, the two services are similar in that both are intended to operate in a shared environment and provide for the personal communications needs of the general public. Finally, the FRS is a low power service such that the range of any particular transmitter is small as compared to the more wide area nature of GMRS.

9. We believe that claims of potential interference to GMRS systems from the operation of FRS units are overstated. The palm-sized FRS units would use only a small fraction of the transmitter power that GMRS stations are authorized to use. Moreover, a FRS unit must use a small and relatively inefficient antenna. A GMRS station, in contrast, may use a large gain antenna located on a tower or building. These differences, combined with the capture effect of frequency modulation emission types should preclude any disruption of GMRS communications.[28]

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[20] *See*, for example, comment of Alton G. Silver at 2, Susan L. Feit at 3, Personal Radio Steering Group, Inc. at 1-2.

[21] *See*, for example, comments of Clifford L. Flaharty at 1, Teri Forrester at 1, Stephen G. Berk at 1, Victor L. Louie at 1, Douglas County REACT Team No. C-0663

[22] *See*, for example, comment of Carolyn Kasper at 1, James P. Robeson at 1, Douglas County REACT Team No. C-0663 at 1.

[23] Comments of Susan L. Feit at 2.

[24] Comments of EIA at 1.

[25] Comments of SpaceLabs at 2-6.

[26] The specific channels are listed in new Section 95.627

[27] On March 14, 1996, our licensing records showed there were 13,620 GMRS systems.

[28] Capture effect is the phenomenon whereby the strongest signal received on a frequency is the only signal that is demodulated by a FM receiver tuned to that frequency

10. EIA and Space Labs also raise the issue of interference. They, however, provide no specifics on interference. Rather their comments appear to be based solely upon the presumption that when new services are authorized the chance of interference to radio devices currently operating is increased. There is no evidence before us that the FRS would cause interference to television reception or medical monitoring equipment. Further, we have taken steps to minimize the interference potential of FRS transmitters in general.[29]

C. Transmitter Technical Standards

11. *Proposal.* In the *Notice* we proposed a maximum transmitter power of 0.500 watt carrier power, various emission limitations and a requirement that the antenna be an integral part of the FRS unit.[30] We also proposed that an FRS unit could, if desired, incorporate a selective calling capability so that a user could receive only messages specifically addressed to him or her. Our proposed transmitter technical standards were intended to limit the interference potential to other services as well as make it possible for the fourteen channels to serve millions of FRS users simultaneously.

12. *Comments.* The comments support our efforts to use transmitter technical standards to minimize interference and maximize reuse. ALLTEL, for example, states our proposal would provide for adequate communications over a very short distance, thereby allowing many small groups of persons to share the same channels.[31] EIA, Cobra, and Uniden America Corporation (Uniden) also support the technical standards we proposed.[32] Motorola, however, argues that even more stringent standards would enhance spectrum sharing with the GMRS and are technologically practical. It suggests the allowable frequency variation can be reduced from 0.0005 percent to 0.00025 percent.[33] Further, according to Motorola, the maximum frequency deviation can be reduced from 5.0 kHz to 2.5 kHz and audio frequency response should be limited to 3.125 kHz.[34] Motorola also recommends that transmitter power be measured in terms of effective radiated power (ERP) at the antenna rather than carrier power as further interference protection to adjacent channels.[35] With regard to a selective calling[36] option, EIA, Cobra, Uniden,

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[29] *See* paragraph 13, *infra*.

[30] *See* proposed Sections 95.627(b) and 95.635.

[31] Comments of ALLTEL Mobile Communications, Inc. at 2.

[32] Comments of the Consumer Electronics Group of the Electronics Industry Association at 2, Cobra Electronics Corp. at 2, and Uniden America Corporation at 4.

[33] Comments of Motorola at 9.

[34] Comments of Motorola at 8.

[35] Comments of Motorola at 9.

and Motorola support our proposal that it be optional.[37] PRSG requests we prohibit FRS units from transmitting tones that could cause a GMRS repeater to transmit on the 467 MHz channels.[38]

13. *Discussion.* Our primary objectives in setting technical standards are to ensure (1) that FRS units do not cause interference to other services and (2) that large numbers of users can share the same channels in the same or adjoining neighborhoods or other areas. The comments support a maximum power of 0.500 watt and a requirement that the antenna be an integral part of the FRS unit. Therefore, we are adopting these proposals. As suggested by Motorola, we are adopting an allowable frequency variation of 0.00025 percent, a maximum frequency deviation of 2.5 kHz and an audio frequency response of 3.125 kHz. These more stringent standards will further minimize interference and increase the FRS-GMRS spectrum sharing capability without a significant increase in costs. We will also specify transmitter power in terms of ERP as suggested by Motorola. We will not require suppliers to incorporate selective calling capability in FRS units. We believe suppliers will incorporate features that FRS users demand as the market for this service develops. The final rules, therefore, allow a manufacturer the option to provide selective calling capability if and when it desires, and to use the technology the manufacturer decides is most appropriate.

D. Administration of the FRS

14. *Proposal.* In the *Notice*, we proposed an administrative approach for the FRS that would minimize regulation.[39] Rather than issue individual licenses, we proposed to administer the FRS within the Citizens Band (CB) Radio Service where operation may be authorized by rule under Section 307(e) of the Communications Act.[40] Administration would be through transmitter technical standards and governed by four simple operating rules.[41] We also proposed to prohibit interconnection with the PSN.

15. *Comments.* The comments strongly agree with our approach. Motorola, for

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[36] Selective calling is a feature that allows a user to hear only communications that are addressed to his or her station. Selective calling enables a user to receive messages without having to also monitor all other communications on the channel.

[37] Comments of EIA at 2, Cobra at 2, Uniden at 4, and Motorola at 9.

[38] Comments of PRSG at 9.

[39] *Notice* at 9.

[40] Section 307(e) of the Communications Act of 1934, as amended, 47 U.S.C. 307(e), provides that the term "citizens band radio service" shall have the meaning given it by the Commission by rule, and that the Commission may by rule authorize the operation of such radio stations without an individual license.

[41] The proposed rules cover eligibility and responsibility, authorized locations, types of communications, and equipment requirements.

example, states that it is imperative that operation in the FRS not require individual licenses.[42] Its experience is that consumers are disinclined to participate in radio services that require licenses, especially where the Commission's regulatory and/or application fees would account for an excessive percent of what should be a relatively low cost product.[43] Motorola also states that licenses serve no purpose given the very low power and itinerant usage of FRS stations.[44] Tandy agrees.[45] The Personal Radio Steering Group (PRSG), however, states that licenses are necessary to prevent business and non-family communications from being transmitted in the FRS.[46]

16. Tandy, the National Emergency Number Association, Cobra, Uniden, Motorola and Pacific Bell Mobile Services agree we should prohibit interconnection of FRS stations to the PSN.[47] They state that interconnection with the PSN would prevent the FRS from fulfilling its contemplated role as a private personal radio service. PRSG also agrees telephone interconnection should be prohibited. It states that the FM technology FRS units will use and the small amount of spectrum allocated to GMRS and FRS could not support telephone traffic.[48] EIA contends, however, that PSN interconnection should be optional.[49]

17. *Discussion.* We agree with the majority of the comments that argue that we should minimize regulation and that individual licensing is unnecessary. The FRS is a very low power, short-range, person-to-person radio service with users operating in a mobile environment. Experience has shown that the existence of a data base of licensees in such a service will not assist us in enforcement efforts nor is it useful for spectrum management purposes.[50] Further, individual licensing is costly to the public and administratively burdensome to the Commission. Also, because the universe of potential users of the FRS is the American public, we believe administration of the FRS should be accomplished primarily through establishing transmitter technical standards rather than complex operating rules. Therefore, we are adopting the

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[42] Comments of Motorola at 6-7.

[43] Comments of Motorola at 6-7. Under our existing rules, the application fee for a new GMRS license and renewal of the license every five years, is $60.

[44] Comments of Motorola at 7.

[45] Comments of Tandy Corporation at 1-2. Tandy states it plans to market FRS radio in the $100-$150 range.

[46] Comments of PRSG at 10.

[47] Comments of Tandy Corporation at 4, The National Emergency Number Association at 1, Cobra Electronics Corp. at 1, Motorola at 9, Uniden America Corporation at 4, and Pacific Bell Mobile Services at 1-2.

[48] Comments of PRSG at 12.

[49] Comments of the Consumer Electronics Group of the Electronics Industry Association at 4.

[50] *See Amendment of Parts 1 and 95 of the Commission's Rules to Eliminate Individual Station Licenses in the Radio Control (R/C) Radio Service and the Citizens Band (CB) Radio Service*, PR Docket No. 82-799, *Report and Order*, 48 Fed. Reg. 24884 (1983).

regulatory approach for the FRS that we proposed. It will be administered within the Citizens Band (CB) Radio Service. Operation will be authorized by rule. Administration will be by transmitter technical standards and simple operating rules.

18. As with the vast majority of the commenters, we continue to believe that interconnection with the PSN should be prohibited. The FRS is intended to fill a niche market that provides families, friends and associates the capability to communicate with one another over a very short range, typically a few city blocks. Allowing interconnection would change the basic nature of the service. Further, there are only fourteen channels available to the millions of potential FRS users. Allowing full duplex interconnection would reduce the number of usable channels to seven and lengthen the time each channel is in use. Finally, allowing interconnection could require licensing and additional regulatory burdens. Therefore we decline to allow interconnection with the PSN. Consumers interested in having this capability may subscribe to the services offered by one of the many commercial radio service providers.

IV. CONCLUSION

19. We believe that establishing this service will fill a niche in the personal communications marketplace, and is an important step toward maximizing the efficient use of the wireless spectrum. These rule changes create a new personal wireless service that will utilize very low power, convenient-to-carry units capable of transmitting voice communications only over a very short range. These changes will enable families, friends and associates to conduct high quality two-way wireless voice conversations among themselves, thereby promoting service to individuals, and public and personal safety. We also believe these rule changes are consistent with the intent of the Telecommunications Act of 1996 that the Commission secure higher quality service for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies.

V. PROCEDURAL MATTERS

20. Pursuant to the Regulatory Flexibility Act (Pub. L. No. 96-354, 94 Stat. 1165, 5 U.S.C. § 603, et seq. (1981), the Commission attached an Initial Regulatory Flexibility Analysis (IRFA) as Appendix A to the Notice of Proposed Rule Making in WT Docket No. 95-102. Written comments on the IRFA were requested. The Commission's Final Regulatory Flexibility Analysis is as follows

A. Need and Purpose of the Action. Our objective is to establish a very short range, license-by-rule, two-way voice radio service in the UHF portion of the radio spectrum to meet the burgeoning public demand for an affordable and convenient means of direct, short-range, two-way voice communication among small groups of persons.

B. Issues Raised in Response to the Initial Analysis. There were no comments submitted in response to the Initial Regulatory Flexibility Analysis.

C. Significant Alternatives Considered and Rejected. All significant alternatives have

been addressed in this Report and Order.

D. Description, Potential Impact, and Number of Small Entities Involved. These adopted rule changes will allow greater flexibility in the use of the radio spectrum, and meet the needs of the public for a short distance, two-way high quality voice radio service. Small businesses may be manufacturers or retailers of devices used in this service, or they may be users of this service in their business activities.

VI. ORDERING CLAUSES

21. Accordingly, IT IS ORDERED that Part 95 of the Commission's Rules and Regulations IS AMENDED as set forth in Appendix B. Authority for this action is contained in Sections 4(i), 303(r), and 307(e) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(r), and 307(e).

22. IT IS FURTHER ORDERED that these amendments are effective 30 days after publication in the Federal Register.

23. IT IS FURTHER ORDERED that this proceeding IS TERMINATED.

24. For further information, contact William T. Cross, Wireless Telecommunications Bureau, Private Wireless Division, (202) 418-0680.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

APPENDIX A

Comments

ALLTEL Mobile Communications, Inc.
Cobra Electronics Corporation
Electronic Industries Association, Consumer Electronics Group
Susan L. Feit
Michael T. McKenna
Motorola, Inc.
National Emergency Number Association
Pacific Bell Mobile Services
Personal Radio Steering Group, Inc
REACT International, Inc.
Spacelabs Medical, Inc.
Tandy Corporation, Radio Shack Division
Telecommunications Industry Association, Mobile and Personal Communications Private Radio Section
Uniden America Corporation
numerous GMRS licensees

Reply comments

Cobra Electronics Corporation
Kerry Cochran
Electronic Industries Association, Consumer Electronics Group
Bennett Z. Kobb
Motorola, Inc.
National Association of Broadcasters
Personal Radio Steering Group, Inc.
Tandy Corporation, Radio Shack Division
Telecommunications Industry Association, Mobile and Personal Communications Private Radio Section
Uniden America Corporation

APPENDIX B

Part 95 of Chapter I of Title 47 of the Code of Federal Regulations is amended as follows:

Part 95-Personal Radio Services

1. The authority citation for Part 95 continues to read as follows:

AUTHORITY: Secs. 4, 303, 48 Stat. 1066, 1082, as amended; 47 U.S.C. §§ 154, 303.

2. Subpart B, Sections 95.191-95.194, is added to Part 95 to read as follows:

Subpart B - Family Radio Service (FRS)

GENERAL PROVISIONS

Sec.

Subpart B-Family Radio Service (FRS)

GENERAL PROVISIONS

§ 95.191 (FRS Rule 1) Eligibility and responsibility.

(a) Unless you are a representative of a foreign government, you are authorized by this rule to operate an FCC certified FRS unit in accordance with the rules in this subpart. No license will be issued.

(b) You are responsible for all communications that you make with the FRS unit. You must share each channel with other users. No channel is available for the private or exclusive use of any user.

§ 95.192 (FRS Rule 2) Authorized locations.

(a) Provided that you comply with these rules, you are authorized to operate an FRS unit:

(1) Within or over any area of the world where radio services are regulated by the FCC; (this area includes the fifty United States and the District of Columbia, the Commonwealth of Puerto Rico, the United States Virgin Islands (50 islets and cays), American Samoa (seven islands), the Commonwealth of Northern Marianna Islands, and Guam Island) or

(2) Within or over any other area of the world, except within or over the territorial limits of areas where radio services are regulated by an agency of the United States other than the FCC or any foreign government (you are subject to its rules); or

(3) Aboard any vessel or aircraft registered in the United States, with the permission of the captain, that is within or over any area of the world where radio services are regulated by the FCC or upon or over international waters; or

(4) Aboard any unregistered vessel or aircraft owned or operated by a United States citizen or company that is within or over any area of the world where radio services are regulated by the FCC or upon or over international waters.

(5) You must operate the FRS unit only according to any applicable treaty to which the United States is a party. The FCC will make public notice of any such conditions.

(b) Your use of an FRS unit must not cause harmful interference to a FCC monitoring facility. Doing so could result in imposition of restrictions upon the operation of the FRS unit within 0.8 km (0.5 mile) of the facility by its Engineer-in-Charge. (Geographical coordinates of the facilities that require protection are listed in § 0.121(c) of this chapter.)

(c) The FCC may impose additional restrictions on a FRS station if the station is located at a point within the National Radio Quiet Zone (an area within the States of Maryland, Virginia and West Virginia). The Zone is the area bounded by:

(1) 39° 15' N. on the North;

(2) 78° 30' W. on the East;

(3) 37° 30' N. on the South; and

(4) 80° 30' W. on the West.

§ 95.193 (FRS Rule 3) Types of communications.

(a) You may use an FRS unit to conduct two-way voice communications with another person. You may use the FRS unit to transmit one-way communications only to establish communications with another person, send an emergency message, provide traveler assistance, make a voice page, or to conduct a brief test.

(b) The FRS unit may transmit tones to make contact or to continue communications with a particular FRS unit. If the tone is audible (more than 300 Hertz), it must last no longer than 15 seconds at one time. If the tone is subaudible (300 Hertz or less), it may be transmitted continuously only while you are talking.

(c) You must not use an FRS unit in connection with any activity which is against federal, state or local law.

(d) You must, at all times and on all channels, give priority to emergency communication messages concerning the immediate safety of life or the immediate protection of property.

(e) No FRS unit may be interconnected to the public switched network.

§ 95.194 (FRS Rule 4) FRS units.

(a) You may only use an FCC certified FRS unit. (You can identify an FCC certified FRS unit by the label placed on it by the manufacturer.)

(b) You must not make, or have made, any internal modification to an FRS unit. Any internal modification cancels the FCC certification and voids your authority to operate the unit in the FRS.

(c) You may not attach any antenna, power amplifier, or other apparatus to an FRS unit that has not been FCC certified as part of that FRS unit. There are no exceptions to this rule and attaching any such apparatus to a FRS unit cancels the FCC certification and voids everyone's authority to operate the unit in the FRS.

3. Section 95.401 is revised to read as follows:

§ 95.401 (CB Rule 1) What are the Citizens Band Radio Services?

The Citizens Band Radio Services are:

(a) The Citizens Band (CB) Radio Service-a private, two-way, short-distance voice communications service for personal or business activities of the general public. The CB Radio Service may also be used for voice paging.

(b) The Family Radio Service (FRS)-a private, two-way, very short-distance voice communications service for facilitating family and group activities. The rules for this service are contained in Subpart B of this part.

4. Section 95.601 is revised to read as follows:

§ 95.601 Basis and purpose.

These rules provide the technical standards to which each *transmitter* (apparatus that converts electrical energy received from a source into RF (radio frequency) energy capable of being radiated) used or intended to be used in a station authorized in any of the Personal Radio Services must comply. They also provide requirements for obtaining type acceptance of such transmitters. The Personal Radio Services are the GMRS (General Mobile Radio Service), the Family Radio Service (FRS), the R/C (Radio Control Radio Service), and the CB (Citizens Band Radio Service). For operating rules, see Part 95, subpart A-GMRS; subpart B-FRS; subpart C-R/C; and subpart D-CB.

5. Section 95.603 is amended by revising the heading and adding paragraph (d) to read as follows:

§ 95.603 Type acceptance or certification required.

* * * * *

(d) Each *FRS unit* (a transmitter that operates or is intended to operate in the FRS) must be certified for use in the FRS in accordance with Subpart J of Part 2 of this chapter.

6. Section 95.605 is revised to read as follows:

§ 95.605 Type acceptance and certification procedures

Any entity must request type acceptance for its transmitter when the transmitter is used in the GMRS, R/C or CB Radio Service, or IVDS following the procedures in Part 2 of this chapter. Any entity must request certification for its transmitter when the transmitter is used in the FRS following the procedures in Subpart J of Part 2 of this chapter.

7. Sections 95.627 through 95.669 are redesignated as 95.629 through 95.671 and a new Section 95.627 is added to read as follows:

§ 95.627 FRS unit channel frequencies.

(a) The FRS unit channel frequencies are:

Channel No.	(MHz)
1	462.5625
2	462.5875
3	462.6125
4	462.6375
5	462.6625
6	462.6875
7	462.7125
8	467.5625
9	467.5875
10	467.6125
11	467.6375
12	467.6625
13	467.6875
14	467.7125

(b) Each FRS unit must be maintained within a frequency tolerance of 0.00025%.

8. Section 95.629 is amended by revising paragraph (b), redesignating paragraphs (d) and (e) as paragraphs (e) and (f) respectively, and adding a new paragraph (d) to read as follows:

§ 95.629 Emission types.

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(b) An R/C transmitter may transmit any appropriate non-voice emission which meets the emission limitations of § 95.633.

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(d) An FRS unit may transmit only emission type F3E. A non-voice emission is limited to selective calling or tone-operated squelch tones to establish or continue voice communications.

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9. Section 95.631 is amended by adding a new paragraph (c) to read as follows:

§ 95.631 Emission bandwidth.

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(c) The authorized bandwidth for emission type F3E transmitted by a FRS unit is 12.5 kHz.

10. Section 95.633 is amended by revising paragraph (b) to read as follows:

§ 95.633 Unwanted radiation.

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(b) The power of each unwanted emission shall be less than TP as specified in the applicable paragraph:

Transmitter	Emission type	Applicable paragraphs
GMRS	A1D, A3E, F1D, G1D, F3E, G3E with filtering	(1), (3), (7)
	A1D, A3E, F1D, G1D, F3E, G3E without filtering	(5), (6), (7)
	H1D, J1D, R1D, H3E, J3E, R3E	(2), (4), (7)
FRS	F3E with filtering	(1), (3), (7)
NOTE: Filtering refers to the requirement in § 95.635(b)		
R/C:		
27 MHz band	As specified in § 95.629(b)	(1), (3), (7)
72-76 MHz band	As specified in § 95.629(b)	(1), (3), (7), (10), (11), (12)
CB	A1D, A3E	(1), (3), (8), (9)
	H1D, J1D, R1D, H3E, J3E, R3E	(2), (4), (8), (9)
	A1D, A3E type accepted before September 10, 1976	(1), (3), (7)
	H1D, J1D, R1D, H3E, J3E, R3E type accepted before September 10, 1986	(2), (4), (7)

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11. Section 95.635 is amended by revising paragraph (a) to read as follows:

§ 95.635 Modulation standards.

(a) A GMRS transmitter that transmits emission types F1D, G1D, or G3E must not exceed a peak frequency deviation of plus or minus 5 kHz. A GMRS transmitter that transmits emission type F3E must not exceed a peak frequency deviation of plus or minus 5 kHz. A FRS unit that transmits emission type F3E must not exceed a peak frequency deviation of plus or minus 2.5 kHz, and the audio frequency response must not exceed 3.125 kHz .

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12. Section 95.637 is amended by adding a new paragraph (d) to read as follows:

§ 95.637 Maximum transmitter power.

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(d) No FRS unit, under any condition of modulation, shall exceed 0.500 W effective radiated power (ERP).

13. Section 95.645 is revised to read as follows:

§ 95.645 FRS unit and R/C transmitter antennas.

The antenna of each FRS unit, and the antenna of each R/C station transmitting in the 72-76 MHz band, must be an integral part of the transmitter. The antenna must have no gain (as compared to a half-wave dipole) and must be vertically polarized.

14. Section 95.647 is revised to read as follows:

§ 95.647 Power capability.

No CB or R/C station transmitter or FRS unit shall incorporate provisions for increasing its transmitter power to any level in excess of the limit specified in § 95.637.

15. Section 95.649 is revised to read as follows:

§ 95.649 Crystal control required.

All transmitters used in the Personal Radio Services must be crystal controlled, except an R/C station that transmits in the 26-27 MHz frequency band, and a FRS unit.

16. Appendix 1 to Subpart E is revised by adding the definition for "FRS", in alphabetical order, to read as follows:

APPENDIX 1 TO SUBPART E-GLOSSARY OF TERMS

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FRS. Family Radio Service.

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